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Shear induced structural ordering of a model metallic glass

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Abstract

We report results of nonequilibrium molecular dynamics simulations of a one-component glassy system under the influence of a shear flow, with the aim of investigating shear-induced ordering of this system. In spite of the very low temperature, the system transforms into a strained crystalline state through well defined nucleation events. Various characteristics of the observed ordering at different strain rates and temperatures are discussed. We also define and discuss the transition rates. © 2009 American Institute of Physics.

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